

-10-

**CLAIMS**

1. A method of forming a fluid tight coupling between the end portions of coaxially aligned metal pipes, comprising the following steps, performed in sequence:
  - inserting a metal sleeve into the open ends of each of said metal pipes to be joined;
  - rolling a groove into an outside diameter of each of said pipes adjacent to but spaced from the open ends of each of said pipes, wherein said groove extends into said sleeve, locking said sleeve in said pipe; and
  - forming a coupling between said pipes by receiving a generally circular housing having a U-shaped crosssection including leg portions received within said grooves retaining said pipes in coaxially aligned relation.
2. The method of forming a fluid tight coupling as defined in Claim 1, wherein said method includes rolling a generally rectangular groove in said outside diameter of each of said pipes and said sleeves.
3. The method of forming a fluid tight coupling as defined in Claim 1, wherein said method includes inserting a metal sleeve into the open ends of said metal pipes formed of the same metal as said pipes.
4. The method of forming a fluid tight coupling as defined in Claim 1, wherein said method includes inserting a metal sleeve into the open ends of said metal pipes having a thickness equal to or less than said metal pipes.

20

-11-

5. The method of forming a fluid tight coupling as defined in Claim 4, wherein said method includes inserting a metal sleeve into the open ends of said metal pipes having a thickness substantially less than said metal pipes.

5 6. The method of forming a fluid tight coupling as defined in Claim 1, wherein said method includes inserting a metal sleeve into the open ends of said metal pipes having an outside diameter generally equal to and inside diameter of said pipes forming a press fit.

10 7. The method of forming a fluid tight coupling as defined in Claim 1, wherein said method includes cooling said metal sleeve prior to inserting said metal sleeve into said open ends of said metal pipes to reduce the outside diameter of said sleeves and form a press fit.

15 8. The method of forming a fluid tight coupling as defined in Claim 1, wherein said method includes heating said metal pipes to increase the inside diameter of said pipes prior to inserting said metal sleeve to form a press fit.

9. A coupling between opposed ends of coaxially aligned metal pipes, each 20 of said metal pipes including an internal metal sleeve having an outside diameter generally equal to an inside diameter of said pipes, a groove rolled into an outside diameter of each of said pipes adjacent to but spaced from said opposed ends of said pipes, said grooves extending into said sleeves and locking said sleeves in said pipes,

and a generally circular metal housing having a U-shaped crosssection including leg portions received within said grooves retaining said pipes in coaxially aligned relation.

10. The coupling between opposed ends of coaxially aligned pipes as  
5 defined in Claim 7, wherein said grooves in said pipe and said sleeve are generally rectangular in crosssection.

11. The coupling between opposed ends of coaxially aligned pipes as  
defined in Claim 7, wherein said sleeves are formed of the same metal as said pipes.

10

12. The coupling between opposed ends of coaxially aligned metal pipes as  
defined in Claim 7, wherein said sleeves have a thickness as necessary to achieve  
required strength of said pipes.

15 13. The coupling between opposed ends of coaxially aligned metal pipes as  
defined in Claim 7, wherein said sleeves are press fit into an open end of said pipes.

20 14. The coupling between opposed ends of coaxially aligned metal pipes as  
defined in Claim 7, wherein said pipes and said sleeves are formed of steel (but not  
limited to).